



### **Energy and Water Appropriations Requests**

**The following requests are Idaho-related projects supported and sponsored by Senators Crapo and Risch:**

**Project Name:** Big Wood River Flood Plain Management and Restoration Reconnaissance Study

**Amount Requested:** \$100,000

**Recipient:** Blaine County

**Description:** The Corps would perform an expedited Reconnaissance Study of the Big Wood River. No systematic evaluation of the Big Wood River has ever been done and future flooding of the Big Wood River threatens some of the most valuable properties in Idaho. The study will enable the Corps to identify and prioritize river restoration projects to reduce flood risks and to provide better protection of public and private property. The Corps, county, state agencies, conservation groups, and private property owners will have information to identify, prioritize, and conduct river restoration and flood protection projects.

Blaine County has some of the highest assessed property values in Idaho. Identification and implementation of flood control and restoration projects will ensure the future safety of those values. In addition, the restoration projects will protect and enhance the Big Wood River's trout fishery, which supports the fishing guide industry.

**Public Interest:** The project will help protect against possible flood damage and provide more recreational opportunities for fishing.

**Project Name:** Center for Advanced Energy Studies (CAES)

**Amount Requested:** \$2,500,000

**Recipient:** Idaho National Laboratory

**Description:** The Center for Advanced Energy Studies is a partnership between the State of Idaho and its academic research institutions, the federal government through the U.S. Department of Energy, and the Idaho National Laboratory managed by the Battelle Energy Alliance, LLC. Through its collaborative structure, CAES combines the efforts of these institutions to provide advanced energy research on both technical and policy issues.

These one-time funds will secure equipment that CAES researchers, faculty, and students will use to address the Nation's energy challenges through cutting-edge research, while preparing the future energy workforce with expanded educational opportunities and creating and sustaining energy discourse to shape U.S. energy policy.

**Public Interest:** The project will support the education of students through the development of advanced energy systems.

**Project Name:** City of Boise Geothermal System Extension to Boise State University, Phase 2

**Amount Requested:** \$1,000,000

**Recipient:** Boise State University

**Description:** This project is to design and construct an extension of the City of Boise geothermal system across the Boise River in Broadway Avenue to the eastern portion of the campus and connect to the Capitol Boulevard extension (Phase I) providing service to new buildings in the campus southeast expansion zone. The project anticipates completion of Phase I of the project which is an extension of the City of Boise geothermal system across the Boise River in Capitol Boulevard to the western portion of the Boise State University Campus. Boise State University has already begun making building improvements to utilize geothermal heating for their new construction on campus and to retrofit existing buildings. The City also views the geothermal system as a tool in encouraging economic development.

**Public Interest:** The extension would increase the geothermal system's capacity to heat. This would create cheaper and cleaner heating for more businesses and publically owned facilities in the Boise area.

**Project Name:** Columbia River Channel Improvement Project

**Amount Requested:** \$25,000,000

**Recipient:** Columbia River Channel Coalition

**Description:** The project would deepen the federal navigation channel from the Mouth of the Columbia River to the Portland/Vancouver area by three feet (from 40 to 43 feet). Deepening the navigation channel will allow ships calling on Columbia River ports to load more cargo, which will yield transportation cost savings for U.S. exporters. The project is scalable and the Corp of Engineers will scale the construction activities to match the amount appropriated. In addition, the project would also enhance or create over 2,000 acres of fish and wildlife habitat.

**Public Interest:** The project will help reduce costs of shipping and transportation in a high traffic area of the Columbia River.

**Project Name:** Compact Systems for Detection and Identification of Nuclear Materials

**Amount Requested:** \$3,000,000

**Recipient:** Idaho State University

**Description:** The Idaho Accelerator Center (IAC) has demonstrated the use of transportable accelerators to identify suspected nuclear materials in the field, to detect explosives and contraband in a variety of challenging circumstances, and to provide nuclear forensic techniques to certain national security challenges. This project would be used to develop new compact accelerators with an agile pulse format and develop and integrate advanced nuclear material detectors. The program will result in the delivery of new lower cost commercial accelerator products for improving the efficiency of cargo inspection systems. The program will provide a field laboratory test bed for demonstration of nuclear detection missions.

**Public Interest:** The project will enable the development of systems to detect nuclear materials.

**Project Name:** Environmentally Sustainable Processes for Nuclear Waste Management and Spent Fuel Recycling

**Amount Requested:** \$1,120,000

**Recipient:** University of Idaho

**Description:** This project will develop new processes using green solvents, including supercritical fluid carbon dioxide and ionic liquids for dissolution, extraction, and separation of uranium and fission products without utilizing traditional aqueous acids and organic solvents. The proposed research will be conducted in collaboration with INL scientists utilizing the CAES facilities. Initial success of the supercritical fluid technology is demonstrated by AREVA's licensing of UI's patents last August for an industrial-scale recovery of enriched uranium from one type of nuclear waste generated by the fuel fabrication plant in Richland, Washington.

**Public Interest:** The project will support the development of economic alternatives to used nuclear fuel management.

**Project Name:** Generation of Electricity from the Hydrogen Produced by Fermentative Utilization of Cellulose Using *Clostridium Thermocellum*

**Amount Requested:** \$1,332,450

**Recipient:** Boise State University

**Description:** Biologically derived organic materials and residues currently constitute a large source of waste biomass and use of these biomass-rich resources for bioenergy could contribute to the displacement of fossil fuels as our primary energy source and consequently reduce green house gas emissions. Hydrogen (H<sub>2</sub>) is a clean biofuel substitute for fossil fuels, producing water as its only by-product when it burns. *Clostridium thermocellum*, a gram-positive thermophilic and anaerobic bacterium, displays the highest rate to degrade cellulose and synthesizes acetate, H<sub>2</sub> and CO<sub>2</sub>. This project will drive advances in biotechnology with metabolic flux analysis and bioengineering to maximize hydrogen production from the fermentation of cellulose by *C. thermocellum*. Additionally, it will enhance emergent microbial fuel cell technologies for generating electricity on a large-scale by oxidizing bio-hydrogen produced from cellulose and other waste biomass.

**Public Interest:** The project will attempt to help find a feasible and clean alternative to fossil fuels. It will thereby attempt to create a healthier, safer, and cleaner environment.

**Project Name:** Idaho Accelerator Center Production of Medical Isotopes

**Amount Requested:** \$4,000,000

**Account:** DOE/Office of Science/Medical Isotope Infrastructure

**Recipient:** Idaho State University

**Recipient's Street Address:** 921 South 8th Avenue, Stop 8007 Pocatello, ID 83209-8007

**Description:** The Idaho Accelerator Center (IAC) proposes to develop a medical isotope production facility that will serve regional isotope needs, conduct basic research in isotope production, educate the next generation of medically-related nuclear scientists, and partner with regional and national entities in medical isotope distribution and use. This program would meet regional and national needs in education and isotope production and provide new isotopes that are not currently part of the national isotope portfolio. IAC would complement, supplement and enhance DOE's National Isotope Program.

**Public Interest:** The project will enable the development of a domestic supply of medical isotopes.

**Project Name:** Intermountain West Geothermal Consortium

**Amount Requested:** \$2,300,000

**Recipient:** Boise State University

**Description:** The mission of the Intermountain West Geothermal Consortium (IWGC) is to support national energy security through research into and development of under-utilized geothermal resources. The IWGC proposes to conduct three initial projects, one in Idaho, one in Utah and one in Nevada that reflect the spectrum of IWGC basic and applied science expertise. The concept of the consortium has been encouraged by DOE, but the current Geothermal Energy Program does not have a budget that would sustain such a project, and the future of a specific program for geothermal research in DOE is uncertain. Therefore, there is a need to look for additional DOE funds to cover this important multi-state project and to specifically mention the IWGC in any bill language.

**Public Interest:** We need to build a partnership among researchers, industry, and state and federal agencies to insure that geothermal energy can meet its potential as a major contributor to our nation's energy portfolio. The IWGC was formed and is ready to provide such a partnership.

**Project Name:** Little Wood River Ecosystem Restoration

**Amount Requested:** \$400,000

**Recipient:** City of Gooding

**Description:** The project will affect approximately 1.5 miles of the Little Wood River flow within Gooding city limits. In the 1930s and early 40s, the Works Progress Administration's Civilian Conservation Corps, constructed a masonry rock wall to channelize the Little Wood River in order to protect the city from floods. Over the years, high water and ice jams have caused severe deterioration of the walls. Large portions of the existing lava rock walls that line the Little Wood River through the city are structurally unserviceable and many have failed and fallen into the channel. The project will remove and replace the existing rock wall and the boxed culverts that severely restrict the stream channel flow.

**Public Interest:** Benefits will come in the form of increased safety to the community and reduced threat to loss of life and property.

**Project Name:** Minidoka Dam Project

**Amount Requested:** \$0

**Recipient:** Idaho Water Users Association

**Description:** The request adds language that will ensure the Secretary of the Interior, in accepting payments from Project contractors for the reimbursable expenses incurred for the replacement, repair, and extraordinary maintenance for the Minidoka Dam Spillway at the Minidoka Dam in Idaho, recovers expenses according to a reasonable repayment process.

**Public Interest:** The project will implement Minidoka Dam rehabilitation expense recovery consistent with public law.

**Project Name:** National Electric Grid Reliability Test Bed

**Amount Requested:** \$5,000,000

**Recipient:** Idaho National Laboratory

**Description:** This project will: (1) establish a National Electric Reliability Grid Test Bed for evaluating the reliability of our nation's electrical grid infrastructure and for research and development associated with the emerging technologies related to Smart Grid (2) create a stand-alone power grid infrastructure that would incorporate smart grid technologies for distribution, transmission and generation and allow full scale testing without interruption to other INL operations (3) mitigate the effects of system complexity of Smart Grid technologies through advanced modeling and digital simulation and real infrastructure testing, and (4) enable the capability to assess architectures and components to mitigate cyber security vulnerabilities prior to full deployment on the power grid.

**Public Interest:** The project will support the development of smart grid technologies.

**Project Name:** Paradise Creek Ecosystem Restoration

**Amount Requested:** \$410,000

**Recipient:** University of Idaho

**Description:** The project provides for the restoration and rehabilitation of certain reaches of Paradise Creek located on the campus of the University of Idaho within the City of Moscow. The project relocates portions of Paradise Creek as they exist today, moving it from a covered, encased conveyance and restoring the creek to a channel alignment approximating the creeks' historical channel. The project will also construct wetland cells for the purpose of conducting research into the bioremediation of storm water run-off. The expected outcomes of the Project include improved flood control, storm water mitigation, environmental improvements, aquatic and riparian habitat improvements, enhanced sustainability, enhanced research opportunities in the area of storm water mitigation and bioremediation as well as providing for enhanced positive visual impacts as an entry feature to the campus.

**Public Interest:** The project's objectives are to provide improved flood control, enhanced aesthetics, recreation, and research opportunities, and improved water quality in the Paradise Creek.

**Project Name:** Rural Idaho Infrastructure Initiative

**Amount Requested:** \$5,000,000

**Recipient:** Rural Idaho – Various

**Description:** Funding for this request is needed to continue and initiate several high-need and high-priority environmental infrastructure projects for rural areas and small communities in Idaho that otherwise would be difficult to accomplish. Rural Idaho communities working with the Corps under this initiative include Ammon (Eastern Idaho Regional Project), Bellevue, Buhl, Burley, Greenleaf, Hazelton, Lava Hot Springs, Pocatello, Rexburg, Rigby, Rupert, Sandpoint, Shelley (Eastern Idaho Regional Project), Soda Springs, St. Anthony, Twin Falls (Auger Falls), and Wendell.

**Public Interest:** The project will support environmental infrastructure projects for rural areas in Idaho.

**Project Name:** Teton Creek Restoration Project

**Amount Requested:** \$310,000

**Recipient:** Friends of the Teton River

**Description:** The overall goal of the Teton Creek Restoration Project is to stabilize Teton Creek, protect adjacent structures and infrastructure, and reestablish a functional aquatic and riparian ecosystem. Specifically, the project will reconstruct the stream channel, build an inset floodplain, stabilize stream banks, and re-vegetate riparian and upland areas along 9,325 feet of Teton Creek.

**Public Interest:** The project will restore the Teton Creek.

**Project Name:** Visualization Center at Boise State University

**Amount Requested:** \$2,000,000

**Recipient:** Boise State University

**Description:** The proposed Visualization Information Center will consist of a power wall with the possibility of a 3-D visualization cave. This technology will provide the Treasure Valley a diverse array of research tools such as image processing, computational geometry, geometric modeling, computer graphics animation, data analysis, and computational mathematics. The Center would also support real-time video teleconferencing and lectures, webcasts, data sharing among distributed locations, live field reports, and real-time data acquisition and presentation.

**Public Interest:** The project will support the efforts of the National Science Foundation and the National Institutes of Health.

**Project Name:** Western Energy Corridor Unconventional Clean Fuels Program

**Amount Requested:** \$10,000,000

**Recipient:** Idaho National Laboratory

**Description:** The project will establish a Federal-State energy technology program, the Western Energy Corridor Unconventional Clean Fuels Program, which leverages capabilities and infrastructure at the INL and Utah State University - Bingham Center. The Program will be focused on research, development and demonstration associated with applying hybrid energy systems to cleaner and more efficient development of oil shale and tar sands in the Rocky Mountain area. The Program will address critical questions, including technical feasibility, economics, energy requirements, water requirements, and impacts; air quality impacts, life-cycle greenhouse gas emissions and management, landscape impacts, and socio-economic impacts.

**Public Interest:** The project will enable the development of domestic unconventional transportation fuels in a sustained and environmentally responsible manner.